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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,035	12/03/2003	Rashid A. Attar	020524	9426

23696 7590 07/02/2007

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EXAMINER	
FIGUEROA, MARISOL	
ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
07/02/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/688,866	KAKUTANI, TOSHIAKI	
	Examiner	Art Unit	
	Peter L. Cheng	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9 and 10* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2-13-2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- **Fig. 3,** reference characters **220, 231, 232, 233, 234, 259;**

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The following title is suggested: **IMAGE PROCESSING APPARATUS FOR CONVERTING THE COLOR DATA BY REFERRING TO A RECONSTRUCTED COLOR CONVERSION TABLE AND AN IMAGE PROCESSING METHOD FOR THE SAME.**

3. The disclosure is objected to because of the following informalities:

- There are some typographical and grammatical errors in the disclosure; for example, **page 4, lines 13, 15** ("decuples" should be "decouples"), **page 10, line 15** ("mage" should be "image"), **page 17, line 25** ("be flown" should be "flow"); **page 18, line 14** (a space should separate "through" and "247"), **page 20, line 5** ("ink is accordingly flown back" should be "ink accordingly flows back"), **page 20, lines 6-7** (for clarity, "significantly thrust back the ink interface at the outlet of the nozzle" should be re-written), **page 20, line 18** (similarly for, "thrust back the ink interface"), **page 21, lines 19-20** ("to make input image data subjected to" may be clearer as "that subjects input image data to"), **page 47, line 2** ("1-bute" should be "1-byte"); lastly, in various places in the specification (e.g., **page 20, line 10**), a "broken line" may be referred to as a "dashed line" (that is, applicant may choose to replace "broken line" with "dashed line", "curve of broken line" could be replaced with "curved, dashed line", and "broken line curve" could be replaced with "curved, dashed line".

Appropriate correction is required.

Claim Objections

4. Claims 1 - 10 are objected to because of the following informalities:

- **Page 50, line 12; page 51, lines 15, 21; page 52, lines 2, 8, 16, 25; page 53, lines 9, 24; page 55, line 9:** regarding the usage of the word **"wherein"**,

The subject matter of a properly construed claim is defined by the terms that limit its scope. It is this subject matter that must be examined. As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

(A) statements of intended use or field of use,
(B) "adapted to" or "adapted for" clauses,
(C) "wherein" clauses, or
(D) "whereby" clauses.

This list of examples is not intended to be exhaustive. See also MPEP § 2111.04.

Therefore, **"wherein"** should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. It is not clear whether the "program stored in a computer-readable medium" contains instructions capable of being *executable* on a computer. That is, a structural and functional interrelationship between the instructions and the structural elements of the computer, which would permit its functionality to be realized, should be included in the claim. Therefore, it is suggested that the words **including computer-executable instructions** be inserted after **program** (that is, **A program including computer-executable instructions stored in a computer readable medium ...**).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1 – 7, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **KAKUTANI [PCT Pub. No. WO02/32113** corresponding to **US Patent 7,046,844 B2]**.

As for claim 1, KAKUTANI (in WO02/32113 / US Patent 7,046,844) teaches an image processing apparatus **[Fig. 1,** computer **10** as an image processing apparatus; **col. 11, lines 25 – 26]** that converts first image data expressed in a first color system into second image data expressed in a second color system by referring to a color conversion table **[Fig. 1,** color conversion table **15]**, said image processing apparatus comprising:

a color conversion table storage module that stores the color conversion table representing a mapping of second image data expressed in the second color system to multiple lattice points at which first image data generated in a color space of the first color system and expressed in the first color system are registered, [Fig. 1, "tone data conversion module" stores "color conversion table" **15],**

wherein the color conversion table is encoded and represents a mapping of encoded second image data to the multiple lattice points where the encoded second image data are obtained by an encoding process [Fig. 21

"is a flow chart that shows the flow of the process of generating a color conversion table for pre-conversion"; **col. 28, lines 20 -21;** "Next, by multiplying the calculated CMYK image data by the calculated encoding coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step **S606**)"; **col. 28, lines 43 - 46],**

which enhances a variation in tone value of the second image data in a predetermined tone area in the first color system while compressing the variation in tone value of the second image data in a residual tone area [Fig. 9; the curved line shows the resulting encoded color data; for CMYK image data values less than approximately 100, the slope of the curve is greater than 1; thereafter, the slope of the curve becomes less than 1; for the first portion of the curve (with slope greater than 1), the variation in tone values is enhanced; for the latter portion (with slope less than 1), the variation in tone values is compressed**];**

a color conversion table reconstruction module that specifies second image data corresponding to multiple lattice points, which are set to include at least different lattice points from lattice points included in the intermediate color conversion table, based on the intermediate color conversion table [Fig. 19 illustrates the process of "generating a color conversion table for pre-conversion from a color conversion table that is the reference standard"; **col. 25, lines 52 – 55.** The "reference standard"

corresponds to the "intermediate color conversion table". However, in the cited embodiment, this intermediate, reference standard table is "recorded" in the printer driver; **col. 26, lines 37 – 42. Fig. 19 (b)** shows the color conversion table for pre-conversion containing a "higher number of grid points than the color conversion table that is the reference standard"; **col. 25, lines 58 – 61. Fig 19 (c)** "shows an example of a color conversion table for pre-conversion for which the grid points have been optimized"; **col. 26, lines 26 - 30]**

and makes the specified second image data subjected to the encoding process, so as to reconstruct the intermediate color conversion table and generate a reconstructed color conversion table [Fig. 21, step S606; "Next, by multiplying the calculated CMYK image data by the calculated encoding coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step S606)"; **col. 28, lines 43 - 46];**

a color conversion module that refers to the reconstructed color conversion table to convert the first image data expressed in the first color system into encoded second image data, which has gone through the encoding process [Fig. 1, color conversion module **14;** see also, **Fig. 15,** steps **S404** (pre-conversion process) and **S406** (color conversion process)**];**

and an image data decoding module that makes the encoded second image data subjected to the decoding process to cancel out the encoding process, thus specifying the second image data expressed in the second color system [Fig. 15, step **S408 (**dot volume data conversion process**);** "With the dot volume data conversion process, by referencing a corrected dot volume table like that shown in Fig. 12, it is possible to obtain dot volume data of various types of dots for which the proportional increase has been eliminated from the CMYK image data for which the tone values have been proportionally increased"; **col. 29, lines 6 - 11].**

However, KAKUTANI (in WO02/32113 / US Patent 7,046,844) *does not teach*

an *intermediate table generation module* that makes the color conversion table subjected to a decoding process, *so as to generate an intermediate color conversion table*, where the decoding process restores the variation in tone value enhanced or compressed by the encoding process.

Instead, KAKUTANI (in WO02/32113 / US Patent 7,046,844) teaches that this "intermediate color conversion table", which contains un-encoded data, is "recorded" in the printer driver as a "reference standard"; **col. 26, lines 37 – 42.** In addition, Kakutani teaches that "it is possible to improve the image quality by supplementing the insufficient resolution by using an encoding coefficient on the data that is *recorded* in the conversion table"; **col. 30, lines 26 – 29.**

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to either forgo the addition of an "intermediate table generation module", since the intermediate table would have been readily available from the printer driver, and thereby, reduce the complexity of the apparatus, or it would have been obvious to add an "intermediate table generation module" if one chose to supplement the "insufficient resolution" by encoding the "*recorded*" conversion table, thereby, allowing the creation of a reference, un-encoded table from which a "pre-converted color conversion table" could be derived.

Regarding claim 2, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing apparatus in accordance with claim 1,

wherein said color conversion module carries out the encoding process to enhance or compress the variation in tone value of the second image data, while keeping a magnitude order of the second image data [Fig. 8 illustrates an encoding coefficient (Ke) curve which varies from magnitude 4 to magnitude 1. Since the coefficient is at least 1, a "magnitude of order" is maintained.**]**.

Regarding claim 3, KAKUTANI (in WO02/32113 / US Patent 7,046,844) *does not teach* an image processing apparatus in accordance with claim 1,

wherein said intermediate table generation module comprises a decode table, which stores a mapping of the encoded second image data to the non-encoded second image data, and said intermediate table generation module refers to the decode table to convert the color conversion table and thereby generate the intermediate color conversion table.

As noted with claim 1, KAKUTANI (in WO02/32113 / US Patent 7,046,844) instead teaches that this "intermediate color conversion table", which contains un-encoded data, is "recorded" in the printer driver as a "reference standard"; **col. 26, lines 37 – 42.** In addition, Kakutani teaches that "it is possible to improve the image quality by supplementing the insufficient resolution by using an encoding coefficient on the data that is *recorded* in the conversion table"; **col. 30, lines 26 – 29.**

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to either forgo the addition of an "intermediate table generation module", since the intermediate table would have been readily available from the printer driver, and thereby, reduce the complexity of the apparatus, or it would have been obvious to add an "intermediate table generation module" if one chose to supplement the "insufficient resolution" by encoding the "*recorded*" conversion table, thereby, allowing the creation of a

reference, un-encoded table from which a "pre-converted color conversion table" could be derived.

Regarding claim 4, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing apparatus in accordance with claim 1,

wherein said color conversion table reconstruction module reconstructs a color conversion table, which has a greater number of lattice points than the number of lattice points included in the intermediate color conversion table [Fig. 19 illustrates the process of "generating a color conversion table for pre-conversion from a color conversion table that is the reference standard"; **col. 25, lines 52 – 55.** The "reference standard" corresponds to the "intermediate color conversion table". **Fig. 19 (b)** shows the color conversion table for pre-conversion containing a "higher number of grid points than the color conversion table that is the reference standard"; **col. 25, lines 58 – 61. Fig 19 (c)** "shows an example of a color conversion table for pre-conversion for which the grid points have been optimized"; **col. 26, lines 26 - 30].**

Regarding claim 5, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing apparatus in accordance with claim 1,

wherein said image data decoding module makes the encoded second image data obtained by said color conversion module subjected to the decoding process as well as conversion into dot density data, which

represents a dot formation density with regard to each of various dots having different tone values expressible by a unit dot [Fig. 15, step **S408** (dot volume data conversion process); "With the dot volume data conversion process, by referencing a corrected dot volume table like that shown in Fig. 12, it is possible to obtain dot volume data of various types of dots for which the proportional increase has been eliminated from the CMYK image data for which the tone values have been proportionally increased"; **col. 29, lines 6 - 11].**

Regarding claim 6, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing apparatus in accordance with claim 5,

wherein said image data decoding module comprises a conversion table, which stores a mapping of the encoded second image data to the dot density data obtained by converting the non-encoded second image data [Fig. 12 illustrates a method for creating a conversion table which maps the "encoded second image data", as shown as either the "deformed", bold, dashed curve (for small dots), or the "deformed", bold, solid curve (for large dots), to "non-encoded second image data", as shown as the corresponding thin, dashed line and thin, solid line, respectively; **col. 21, lines 39 - 51],**

and said image data decoding module refers to the conversion table to directly convert the encoded second image data obtained by said color conversion module into the dot density data [Fig. 15, step **S408** (dot volume

data conversion process); "With the dot volume data conversion process, by referencing a corrected dot volume table like that shown in Fig. 12, it is possible to obtain dot volume data of various types of dots for which the proportional increase has been eliminated from the CMYK image data for which the tone values have been proportionally increased"; **col. 29, lines 6 - 11].**

Regarding claim 7, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing apparatus in accordance with claim 1,

wherein the first color system is an RGB color system and the second color system is a CMY color system [Kakutani teaches "an example of a case of color conversion of RGB image data into ... CMY colors"; **col. 3, lines 31 - 36].**

Regarding claim 9, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches an image processing method that converts first image data expressed in a first color system into second image data expressed in a second color system by referring to a color conversion table [Fig. 1, **color conversion table** 15], said image processing method comprising:

a first step of storing the color conversion table representing a mapping of second image data expressed in the second color system to multiple lattice points, at which first image data generated in a color space of the first

color system and expressed in the first color system are registered [Fig. 1, "tone data conversion module" stores "color conversion table" **15],**

wherein the color conversion table is encoded and represents a mapping of encoded second image data to the multiple lattice points, where the encoded second image data are obtained by an encoding process [Fig. 21 "is a flow chart that shows the flow of the process of generating a color conversion table for pre-conversion"; **col. 28, lines 20 - 21;** "Next, by multiplying the calculated CMYK image data by the calculated encoding coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step **S606)**"; **col. 28, lines 43 - 46],**

which enhances a variation in tone value of the second image data in a predetermined tone area in the first color system, while compressing the variation in tone value of the second image data in a residual tone area [Fig. 9; the curved line shows the resulting encoded color data; for CMYK image data values less than approximately 100, the slope of the curve is greater than 1; thereafter, the slope of the curve becomes less than 1; for the first portion of the curve (with slope greater than 1), the variation in tone values is enhanced; for the latter portion (with slope less than 1), the variation in tone values is compressed**];**

a third step of specifying second image data corresponding to multiple lattice points, which are set to include at least different lattice points from lattice points included in the intermediate color conversion table, based on the intermediate color conversion table [Fig. 19 illustrates the process of "generating a color conversion table for pre-conversion from a color conversion table that is the reference standard"; **col. 25, lines 52 – 55.** The "reference standard" corresponds to the "intermediate color conversion table". However, in the cited embodiment, this intermediate, reference standard table is "recorded" in the printer driver; **col. 26, lines 37 – 42. Fig. 19 (b)** shows the color conversion table for pre-conversion containing a "higher number of grid points than the color conversion table that is the reference standard"; **col. 25, lines 58 – 61. Fig 19 (c)** "shows an example of a color conversion table for pre-conversion for which the grid points have been optimized"; **col. 26, lines 26 - 30]**

and making the specified second image data subjected to the encoding process, so as to reconstruct the intermediate color conversion table and generate a reconstructed color conversion table [Fig. 21, step S606; "Next, by multiplying the calculated CMYK image data by the calculated encoding coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step S606)"; **col. 28, lines 43 - 46];**

a fourth step of referring to the reconstructed color conversion table to convert the first image data expressed in the first color system into encoded second image data, which has gone through the encoding process [Fig. 1, color conversion module **14;** see also, **Fig. 15,** steps **S404** (pre-conversion process) and **S406** (color conversion process)**];**

and a fifth step of making the encoded second image data subjected to the decoding process to cancel out the encoding process, thus specifying the second image data expressed in the second color system [Fig. 15, step **S408** (dot volume data conversion process)**;** "With the dot volume data conversion process, by referencing a corrected dot volume table like that shown in Fig. 12, it is possible to obtain dot volume data of various types of dots for which the proportional increase has been eliminated from the CMYK image data for which the tone values have been proportionally increased"; **col. 29, lines 6 - 11].**

However, KAKUTANI (in WO02/32113 / US Patent 7,046,844) does not teach

a second step of making the color conversion table subjected to a decoding process, so as to *generate an intermediate color conversion table*, where the decoding process restores the variation in tone value enhanced or compressed by the encoding process.

Instead, KAKUTANI (in WO02/32113 / US Patent 7,046,844) teaches that this "intermediate color conversion table", which contains un-encoded data, is "recorded" in the printer driver as a "reference standard"; **col. 26, lines 37 – 42.** In addition, Kakutani teaches that "it is possible to improve the image quality by supplementing the insufficient resolution by using an encoding coefficient on the data that is *recorded* in the conversion table"; **col. 30, lines 26 – 29.**

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to either forgo the addition of an "intermediate table generation module", since the intermediate table would have been readily available from the printer driver, and thereby, reduce the complexity of the apparatus, or it would have been obvious to add an "intermediate table generation module" if one chose to supplement the "insufficient resolution" by encoding the "*recorded*" conversion table, thereby, allowing the creation of a reference, un-encoded table from which a "pre-converted color conversion table" could be derived.

Regarding claim 10, KAKUTANI (in WO02/32113 / US Patent 7,046,844) further teaches a program stored in a computer readable medium, that causes a computer to attain an image processing method that converts first image data expressed in a first color system into second image data expressed in a second color system by referring to a color conversion table **[Fig. 1,** color conversion table **15]**, said program comprising:

a first function of storing the color conversion table representing a mapping of second image data expressed in the second color system to multiple lattice points, at which first image data generated in a color space of the first color system and expressed in the first color system are registered [Fig. 1, "tone data conversion module" stores "color conversion table" **15],**

wherein the color conversion table is encoded and represents a mapping of encoded second image data to the multiple lattice points, where the encoded second image data are obtained by an encoding process [Fig. 21 "is a flow chart that shows the flow of the process of generating a color conversion table for pre-conversion"; **col. 28, lines 20 - 21;** "Next, by multiplying the calculated CMYK image data by the calculated encoding coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step **S606)**"; **col. 28, lines 43 - 46],**

which enhances a variation in tone value of the second image data in a predetermined tone area in the first color system, while compressing the variation in tone value of the second image data in a residual tone area [Fig. 9; the curved line shows the resulting encoded color data; for CMYK image data values less than approximately 100, the slope of the curve is greater than 1; thereafter, the slope of the curve becomes less than 1; for the first portion of the

curve (with slope greater than 1), the variation in tone values is enhanced; for the latter portion (with slope less than 1), the variation in tone values is compressed];

a third function of specifying second image data corresponding to multiple lattice points, which are set to include at least different lattice points from lattice points included in the intermediate color conversion table, based on the intermediate color conversion table [Fig. 19 illustrates the process of "generating a color conversion table for pre-conversion from a color conversion table that is the reference standard"; **col. 25, lines 52 – 55.** The "reference standard" corresponds to the "intermediate color conversion table". However, in the cited embodiment, this intermediate, reference standard table is "recorded" in the printer driver; **col. 26, lines 37 – 42. Fig. 19 (b)** shows the color conversion table for pre-conversion containing a "higher number of grid points than the color conversion table that is the reference standard"; **col. 25, lines 58 – 61. Fig 19 (c)** "shows an example of a color conversion table for pre-conversion for which the grid points have been optimized"; **col. 26, lines 26 - 30]**

and making the specified second image data subjected to the encoding process, so as to reconstruct the intermediate color conversion table and generate a reconstructed color conversion table [Fig. 21, step S606; "Next, by multiplying the calculated CMYK image data by the calculated encoding

coefficient Ke, CMYK image data for which the tone values have been proportionally increased is calculated (step S606)"; **col. 28, lines 43 - 46];**

a fourth function of referring to the reconstructed color conversion table to convert the first image data expressed in the first color system into encoded second image data, which has gone through the encoding process [Fig. 1, color conversion module **14;** see also, **Fig. 15,** steps **S404** (pre-conversion process) and **S406** (color conversion process)**];**

and a fifth function of making the encoded second image data subjected to the decoding process to cancel out the encoding process, thus specifying the second image data expressed in the second color system [Fig. 15, step **S408** (dot volume data conversion process)**;** "With the dot volume data conversion process, by referencing a corrected dot volume table like that shown in Fig. 12, it is possible to obtain dot volume data of various types of dots for which the proportional increase has been eliminated from the CMYK image data for which the tone values have been proportionally increased"; **col. 29, lines 6 - 11].**

However, KAKUTANI (in WO02/32113 / US Patent 7,046,844) does not teach

a second function of making the color conversion table subjected to a decoding process, so as to *generate an intermediate color conversion*

***table*, where the decoding process restores the variation in tone value enhanced or compressed by the encoding process.**

Instead, KAKUTANI (in WO02/32113 / US Patent 7,046,844) teaches that this "intermediate color conversion table", which contains un-encoded data, is "recorded" in the printer driver as a "reference standard"; **col. 26, lines 37 – 42.** In addition, Kakutani teaches that "it is possible to improve the image quality by supplementing the insufficient resolution by using an encoding coefficient on the data that is *recorded* in the conversion table"; **col. 30, lines 26 – 29.**

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to either forgo the addition of an "intermediate table generation module", since the intermediate table would have been readily available from the printer driver, and thereby, reduce the complexity of the apparatus, or it would have been obvious to add an "intermediate table generation module" if one chose to supplement the "insufficient resolution" by encoding the "*recorded*" conversion table, thereby, allowing the creation of a reference, un-encoded table from which a "pre-converted color conversion table" could be derived.

Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter L. Cheng whose telephone number is 571-270-3007. The examiner can normally be reached on MONDAY - FRIDAY, 8:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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